THE SOUTH ISLAND OTTER — A REASSESSMENT

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SUMMARY: Evidence of the existence, in parts of the South Island, of a native otter-like mammal called by the Maoris the *waitoreke* is re-examined in the light of a theory that it could have been introduced by man. Its possible origin and zoological classification are discussed, and fields suggested for further research.

INTRODUCTION

The waitoreke, or supposed South Island otter, has remained a mystery for over a century; for, despite the authoritative evidence of Haast (1877, 1879), some highly circumstantial early Maori accounts and numerous well-documented and impressive claims of later sightings by amateur naturalists, zoologists generally have been only too happy to dismiss the animal as a myth. An examination of much of the evidence was attempted by Wall (1926), but this was based on a very superficial knowledge of the ecology of otters generally and, in any event, he was unashamedly arguing from a conclusion. A much more objective survey was made by Watson (1960), who was more guarded in his conclusions; but he, in turn, deliberately ignored all accounts later than about 1880 on the plea that they were probably based on sightings of various smaller introduced mammals. The present paper, besides recording some new material of more recent date, attempts a reassessment of the earlier evidence and suggests a theory which could account for the presence in New Zealand of a land mammal such as the waitoreke.

HAAST'S ACCOUNT

Disregarding as inconclusive the Dusky Bay accounts of Cook's men (Beaglehole, 1959), the strongest evidence of the animal's existence is Haast's description of the tracks seen by him in 1861 on the upper Ashburton River "at a height of 3,500 feet above the level of the sea, in a region never before trodden by man". (Hochstetter, 1867; Haast, 1877, 1879). Testimony from such a source demands much more respect than it has received from zoologists, particularly as he was emphatic that the tracks "exactly resembled those of the otter of Europe", with which there can be no doubt he would have been familiar. Sceptics have been diligent in evading the issue, usually sheltering behind the assumption that the tracks must have been those of a wild dog (Wall, 1926). However, of all animal tracks those of a dog or, for that matter, any of the *Canidae,* are among the easiest to distinguish from those of five-toed mammals such as otters (Family, *Mustelidae*). Haast, too, had many examples to study; he could not have been misled by a stray freak impression, while Wall's other suggestion (prints fabricated by a practical joker) is equally improbable in the light of known facts (Pollock 1970).

G. R. Williams (*in. litt.,* 1968) put forward an alternative. Bearing in mind the difficulty which I have found in distinguishing between *Lutra* tracks and those of the brush-tailed opossum (*Trichosurus vulpecula*), he suggested that Haast's animals could have been descendants of opossums liberated near Riverton by Capt. John Howell, between the years 1837–40 (Pracy 1962). The first successful importation of opossums is credited by Wodzicki (1950) to Basstian at the same place in 1858; but assuming that Howell's introduction also succeeded, for Williams' point to have any validity these animals and their progeny must have spread at an average rate of 10 miles a year, to say nothing of crossing such formidable rivers as the Mataura, Clutha, Waitaki and Rangitata. Further, they would have presumably left the intervening country well-populated; but so far from there being any evidence of this, as recently as 1947–50 there were no opossums between the Hinds and Rangitata Rivers (Davidson 1965).

However, possibly the most extraordinary attempt to discredit Haast's account was made by Bagnall and McLintock (1966). In a chapter on "Animals, Mythical" they wrote: "In 1861 Julius Haast, anticipating tales of the Himalayan yeti,

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saw tracks in the snow [*sic*] at the head of the Ashburton, resembling those of the otter". But nobody ever said the tracks were in snow — least of all Haast himself, who in 1877 added that they were "upon the mudflats near the Ashburton River". Such negligence in checking sources is surprising.

MAORI REPORTS AND TRADITIONS

In the light of Haast's testimony it is possible to take a more objective view of the Maori accounts (in Watson 1960), which critics have been eager to dismiss as myth. I disregard here the Molyneux Bay reports of animals at Lake Hawea, which seem based on hearsay or tradition; Maopo at Taumutu also obviously lacked first-hand knowledge, and seems to have become confused with the kaurehe, which is almost certainly the tuatara. It is otherwise however with Tarawhata, a chief of the Arowhenua district, whose exploits figure rather prominently in early South Canterbury history. The Arowhenua natives claimed first-hand knowledge of the animal (Heuvelmans 1958), and Tarawhata himself in 1848 gave Mantell a description which is full of otter-like detail. It was, he said, two feet from nose to root of tail, lived in holes, had grisly-brown fur, short thick legs, bushy tail and a head between that of a dog and cat. He emphatically refuted Maopo's suggestion that the animal laid eggs — an intrusion, surely, of the tuatara — and added the interesting if puzzling information that there were two kinds — a water kind living on fish, a land kind on lizards (Watson 1960).

Watson (1960) shrewdly commented that if the waitoreke had been a purely imaginary beast it would surely have had more remarkable characters than the Maoris attributed to it. However, Tarawhata's sincerity was at once put to the test by Walter Mantell who offered a reward for the capture of a specimen. Tarawhata and his men immediately set out for the hills, but returned empty-handed — which, considering the otter's elusiveness, is not surprising (Ley 1951; Heuvelmans, 1958).

Of the other Maori reports, Tamihana te Rauparaha, who spoke of a large flat tail, Tuture te Kene, who said the animal was active like a dabchick, and Maopo, who held the tradition of its having been kept as a pet by his forefathers (Watson 1960) are worth notice; the last account is important when considering the animal's possible origin.

REPORTS OF LATER DATE

It is time to reassess many of the accounts of sightings since 1890, as listed by Wall (1926). These have been collected in a file of clippings and correspondence kept in turn by Hall, Moffett and now L. E. Henderson; for convenience I will refer to them as the Henderson papers.

Of the witnesses whose testimony is recorded, probably the most observant, and certainly the luckiest, was A. E. Tapper of Clifden Station, Lower Waiau, and later Grassmere near Invercargill. He was a keen angler, with a liking for unfrequented water, and this, as Stephens (1957) observes, is probably as good a qualification as any for seeing otters in the wild. In letters during 1926 to the *Southland Times* and to Hall he listed no less than six possible sightings, over the period from 1890 to 1921, as follows:

In the early 1890s, on Clifden Station, an animal nearly the size of a half-grown rabbit, of a "dark mousey" colour, was seen in the bed of a creek, apparently seeking under the stones for food; when disturbed it dived into deep water and disappeared under an overgrown bank.

At about the same time while fishing at dusk on the Waihopai River a mile below Kennington he heard a splashing and something big swam up against the current to within two yards of him. Though fairly dark, it was close enough for him to see a small round head like a seal's.

At a date uncertain, while fishing on the Waitutu River near Lake Hakapoua, he saw an animal about the size of an opossum in a broadleaf tree on the bank; when he moved to investigate, it dived into the water and disappeared.

About 1912 while fishing in the Makarewa River below Wallacetown he watched for about 15 minutes two animals in a ripple about 100 yards away diving, playing or fishing; when disturbed they dived and disappeared. This sighting was confirmed by W. Hazlett.

In 1920, on the Waikiwi River below the Invercargill abattoir, "a lonely little-frequented spot in the middle of a swamp", something crossed

the stream about a chain ahead. The shape of the head, small and round, caused him to investigate further, but the creature dived and vanished.

A year later, on the same stream, a little higher up — here the importance of the account merits quotation in full: "About sundown — I had fished up to an old decayed bridge and was but a few yards past it when something that no doubt had been sheltering under the bridge splashed, dived into the water and swam past me upstream, disappearing under some scrub on the other side. It was dusk, the water dark, yet I was close enough to distinguish a dark shadowy form 18 in. or two feet deep. The wake it made in the water showed it to be of some size, but the strangest part was the noise it made when going through the water and the numerous bubbles that followed in its track. The noise was exactly that made by throwing a handful of shots or small stones in the water, and the bubbles I should think would lead one to suppose that it was a fur-bearing animal and caused by the air particles in the fur being released by the action of the animal in motion while swimming. I went down next day but beyond finding tracks in the mud similar to a rabbit's but apparently webbed I found no trace."

Further details, as they occurred to him, were given in letters to Hall and *The Southland Times*. To Hall: "I had heard previously from two or three sources of the existence of something in the creek — some thought, by the splashing, that it was something extra big in the trout line, but the majority who had a closer view said it was some kind of a water animal almost as big as a rabbit". To *The Southland Times* on June 11: " . . . some months later investigation made at the spot where it disappeared revealed a hole in the bank about the size of a rabbit's burrow. The water had been lowered some four or five feet by the dredge so the entrance would be two to three feet under the water". The same dredge had deposited so much spoil on the bank that Tapper was unequal to the task of excavation. Of the bubbles, he said they reminded him of those made by a king penguin diving in a pool, but they were "infinitesimal" compared with those of the Waikiwi incident.

The exact site could be identified as recently as 1968, for the remains of the old bridge are still extant. Here, however, the resemblance ends; for the dredge, and pollution by wastes from abattoir and boiling-down works have turned the Waikiwi at this point into virtually an open sewer; the surrounding swamps, too, have been drained and cultivated, so all cover has vanished.

The account is most impressive; for though Tapper claimed no knowledge of lutrine ecology, here, vividly described and accurately reasoned, is the "bubble chain" so characteristic of the otter (Stephens 1957) and of no other animal known or suspected to be at large in New Zealand.

Only Wall made any attempt at explanation. It might, he said, have been a rat; shags and ducks also, when swimming under water "look very like animals". The bubble chain he ignored, but continued "in any case, if the otter ever existed, it is extremely unlikely that it could have lived in the low country undiscovered for 70 or 80 years". This betrayed ignorance both of the otter's nomadic habit and of the dense cover which at that date lined the streams.

Of the other accounts in the Henderson papers, most originate from amateur naturalists of some standing. Thus G. I. Moffett in April 1924, while fishing in the Eglinton River, saw one morning, about 100 yards off, a small animal of a dark colour running rather rapidly in a crouching manner. It had apparently come up out of the river, to which it swiftly returned on Moffett's approach. In the mud he found two footmarks and two other impressions of clawmarks; these were bigger than cats' but only three toes showed. Later McHardy of Te Anau Downs Station told him that he, about the same time, had seen an animal a little bigger than a rabbit and mouse-coloured jump out of the water on to the bank, then disappear back into the stream; he had never seen such an animal before.

Dr. J. Garfield Crawford, fishing the Dunsdale Stream in 1936, saw an animal which darted from behind between his friend's legs, splashed into the clear water and immediately submerged; it swam with even strokes and shortly disappeared. From memory six years later he described it as from 7 in. to 8 in. long, body 2 in. broad (uniform), rounded head and flat-like tail. Feet from 1 to $1\frac{1}{2}$ in. long, colour "mousey" and coat apparently furry. The flat tail is important, and while the dimensions quoted are small for an otter, Harris (*in litt.* 1968) has pointed out that there can be wide divergence of size in some species of otter, particularly between the sexes.

Numerous other accounts in the Henderson papers, while generally consistent with the pattern, are here omitted, but Harris (1968) has commented: "It must at once be conceded that a number of these accounts do read very convincingly; certainly they go far towards convincing any reader unfamiliar with the fauna of New Zealand that for many years some unexplained animal has been at large, and an aquatic animal at that".

However, the most recent reported sighting was not available to him, and goes far to confirm not only the animal's existence, but also its otter-like nature. At about 3 p.m. on an afternoon in early autumn 1957 Mrs. O. Linscott, of Thornbury, was opening a gate beside a lagoon on the family farm; this lagoon drains into the Aparima River about 400 yards away, and is heavily fringed with flax and willow. She saw the animal swimming across to the opposite bank; it did not submerge but disappeared into the vegetation and she had the impression that on reaching cover it stopped to watch her. She saw only the head and forepart of the body, but said it had a dark "browny-purple" face, with small pop eyes and flattish round ears. There was no noticeable neck, and the head seemed small in proportion to the body. The fur was like a cat's, but with longer guard hairs, and there were short but stout vibrissae on the head. This detail cannot be faulted.

Rabbits had formerly been abundant round the lagoon, and there were numerous old burrows. It may thus be significant that at a much earlier date Mrs. Linscott's father-in-law saw two animals playing in the same lagoon; this recalls Tapper's experience on the Makarewa River (above) and suggests the activities of a mating pair.

SCIENTIFIC OBJECTIONS

I submit that such a mass of evidence, if not conclusive, at least establishes a strong prima facie case, calling for further examination on scientific lines. Yet (to quote Heuvelmanns 1958) "most specialists who have heard of the waitoreke find it simpler to ignore the problems that it implies by denying its existence out of hand". The reasons have been stated by Wall (1926) and tacitly accepted by men much better qualified; yet Wall's argument is fallacious in practically every respect.

His first point is the obvious one, that any such animal, if present in New Zealand, must inevitably have been seen far more frequently than seems to have been the case. This ignores the otter's nomadic character, shyness, and its aquatic and, above all, nocturnal habit. The uninitiated may live among otters for many years and not realise it (Harris 1968), and in this respect we are all in this category. With ample cover, and a sparse population both animal and human, the sightings recorded, plus an unknown number that may not have been reported, seem consistent with what is known of otters elsewhere.

The second argument affects signs, and may be best stated in Wall's own words: "Though the otter is shy and nocturnal in habit, he leaves, and must leave, his signs or spraints, his footprints or spoor; and the remains of his fish suppers to betray him, and any good observer can tell very quickly whether a given river holds otters or not". Harris (1968) substantially repeated this, wisely omitting the reference to fish suppers; Stephens (1957) remarked on the paucity of such finds in Britain, and Tapper actually claimed to have found half-eaten fish on the Waikiwi banks. The other points however are equally superficial, for even the best New Zealand observers are seldom knowledgeable about otter seals (i.e. footprints) and spraints. Further, I have found that there is a marked degree of similarity between prints made by an otter and the forefoot of the ubiquitous brushtailed opossum. Prints I found on the Taylor Stream in mid-Canterbury and later beside the Kakahu River seemed to agree well with diagrams of English *Lutra* tracks (Lawrence and Brown 1967); and though they were promptly identified by specialists as opossum, I was reluctant to accept this, if for no other reason than that prints of the opossum's highly characteristic rear foot could not be detected. It was only when skilled English specialists such as Harris and H. G. Hurrell were unable to confirm identification as otter that I was forced to concede defeat; for whatever were the tracks I had found, I could not claim they were the same as Haast's. At the same time, both Hurrell and Harris (*in litt.*) conceded that some of my slides did have rather an "ottery" look.

So too with spraints. Accepting that the habits of otters in this respect are likely to be uniform throughout the world — a matter of assumption rather than proof — I have searched diligently for

such signs in all rivers within reach, and in March 1969 I found, in the Kakahu River near where earlier I had found tracks, faeces which appeared to me to meet the specifications. The location was typical — two large rocks in the middle of a wide deep pool, to which some animal, at different times over a considerable period, had made resort to leave deposits. These, when fresh, were black, cylindrical and moderately slimy, and what odour they possessed seemed musky and not unpleasant — typical of otter spraints; yet G. A. Tunnicliffe of the Canterbury Museum immediately pronounced them pukeko (*Porphyrio melanotus*); and pukeko, on microscopic examination, they proved to be.

So if I could mistake opossum tracks and pukeko faeces for otter seals and spraints, the converse is equally true; anyone but a trained specialist would immediately dismiss the rarer manifestations as but variant forms of the commoner.

It is worth noting that on October 1 1966 P. Whitelock, a schoolmaster then of Queenstown, found, when fishing the lower Nevis River, prints and faeces which cannot be so readily dismissed. The prints, from his description, were clawed, five-toed and at least 5 cm. across, ruling out the lesser introduced mustelids (weasels and stoats); the faeces were in a scrape in the sand, very wet and slimy, about 4 cm. long; the odour was unpleasant and reminded him of a polecat. The animal responsible had come out of, and returned to, the water. The opossum cannot be blamed here; and although the unpleasant smell and the use of a scrape rather than an eminence seem unotterlike, there is still the possibility of variation between different races — research in this respect seems to have been confined to *L. lutra*. (Haast, it will be remembered, apparently found no spraints at all.)

Wall's third argument, and the one which has weighed most with scientists, is zoogeographic — that since the severance of the north-western land bridge — presumably in the late Cretaceous — no indigenous land mammal could have appeared in New Zealand. Although this cannot be contested, the same argument could equally be used to dispose of the Maori dog and Polynesian rat (*Rattus exulans*) if their presence had not been established by confirmed sightings and the manner of their arrival was unknown. What Wall failed to realise was that for the waitoreke introduction by human agency is equally possible; indeed, intrinsic factors in the evidence directly point that way. On the one hand are the Maori traditions of the animals having been kept as pets; on the other, there is the well established fact that in various parts — especially India and South-east Asia — otters often assume the same status, but with a utilitarian motive — the capture of fish (Gudger 1927; Hornell 1950). Many accidental voyages over long distances in the Pacific are recorded (Sharp 1956), and there is no reason why they should all have been from east to west; storm tracks from the Coral Sea or westerly gales of the Roaring Forties could easily have cast on our shores vessels from south or south-east Asia that found themselves in their path. If any of these were fishing vessels with tame otters on board, the mystery of the waitoreke's origin would be resolved.

Of the various Asiatic races of otter, the two which correspond most closely to the descriptions are *L.* (*Lutrogale*) *perspicillata*, the smooth otter of India and Malaya, and *L. lutra barang*, the 'simung', the sub-species of *L. lutra* found in Indonesia, Siam and Annam. Both are domesticated for fishing in their native habitat, so identification of the waitoreke with either would fix its origin with some certainty. If the smooth otter, the fishermen could have been Tamils from southern India, particularly Cochin on the south-west coast. Such as origin could possibly link with Colenso's Tamil bell (found near Whangarei and now in the Dominion Museum), and even also some of the rock drawings in Weka Pass (Haast 1879). If, on the other hand, it should be the simung, Indonesians would more probably be responsible, and the korotangi — not the legendary bird, but the stone artifact also in the Dominion Museum — could be supporting evidence. Simmonds (*pers. comm.* 1967) claims this has now been conclusively traced to Indonesia and to an era well subsequent to the assumed date of the Maori "Fleet" in the 14th century; which disposes of the legend that it came here on the *Tainui* canoe. Yet there is little doubt that the korotangi reached New Zealand in pre-European times, and an accidental voyage such as I have suggested seems as likely an origin as any.

The fact that anthropologists have failed to trace in the Maori any non-Polynesian stock is irrelevant; crews of a fishing-boat would probably

be exclusively male, and their gene contribution lost unless some intermarried with the resident Maoris. Thus, it is not necessary to resort to the legend, propounded by one tribe and firmly disputed by others, of a black people among the earliest inhabitants of the island. (Beattie 1939).

The name "waitoreke" is itself interesting, for even Sir Peter Buck pronounced it ungrammatical, and inferentially meaningless (Watson 1960). In face of such authority, it needs some boldness to to suggest a possible derivation; yet I find not one, but two:

Considering first the common substitution, in South Island Maori dialects, of 'k' for 'ng', it could be the equivalent of "waitorengi", meaning "disappearing in the water". However, I personally prefer to think that Maoris, confronted with a strange object, tended rather to "Maori-ise" its imported name than to invent one of their own. On this basis "wai" would be a later purely Maori addition of obvious significance, the substantive appellation being "toreke". The similarity between this and the Gypsy "tarka" and the Old English "tek" is striking; for a possible connecting link, the Sanskrit "tiryang/tiryak" can mean "an amphibious animal". (As Harris points out, I was wrong in ascribing the species name *"tarayensis"* to this root; but this was only incidental to my theory).

As a matter of interest, the Lake Ellesmere spit, near which some of the Maori traditions arose, was called by the Maoris "Kaitorete" — "the place where parakeets were eaten". This may be so, but that bleak bare shingle bank seems a most inappropriate habitat for a forest bird like the parakeet, nor would it be a likely diet among such abundance of more substantial fare. However, Beattie (1954) noted a late tendency among southern Maoris for 'k' to merge into 't'; if the name were really "Kaitoreke" that would be much more logical, as it could commemorate the place where some old Maori ate an otter.

The date of the animal's arrival can be deduced with some probability. The Ngaitahu people seem to have relied mainly on hearsay; their confusion with the kaurehe or tuatara has already been noted. The Ngatimamoe, on the other hand, spoke with much greater certainty of the animal's existence, nature and habits, but they had no traditions of its actual arrival. This sets the likeliest date as some decades before the time — probably during the 16th century — when they came down from the north to absorb the native Waitaha. It may be only coincidence that 1500 A.D. or thereabouts is the date ascribed to Colenso's bell (Hunt 1955).

CONCLUSIONS

My conclusions therefore are —

(a) The waitoreke of Maori tradition is an actual, not a mythical, animal;

(b) It is an otter (genus *Lutra*) of some Asian species yet to be identified;

(c) It was introduced, probably about five centuries ago, by storm-driven mariners or fishermen from South-east Asia; and

(d) It still survives in western Otago and Southland; probably (though in reduced numbers) in the Canterbury foothills between the Waimakariri and Opuha Rivers; and possibly also in isolated localities such as southern Nelson, south Westland and the Catlins district of south-east Otago.

These conclusions indicate the likeliest localities for future search. One should bear in mind, however, that, to the otter, environment is quite as important as food, and that man, by his destruction of habitat, is here the animal's sole natural enemy. Nowhere is this better illustrated than in the Makarewa basin, the scene of Tapper's most dramatic observations. Destruction of cover and heavy pollution of streams have made the environment one which any otter would shun.

There has been a lesser, but still serious, deterioration in the Canterbury foothills; burning-off and overgrazing have wiped out much of the natural cover, and turned what were once pleasant and moderately constant streams into alternate torrents and trickles. Recent evidence suggests there are still otters about; if so, I fear their prospects of continued survival in this area are no more than marginal, for the toxic effect of D.D.T. residues in fish could be a further hazard.

That leaves, as the ultimate stronghold, the fiords and the neighbouring parts of Otago and Southland. Environment here is largely unspoiled, but the necessary consequence is that the sites most likely to attract otters are those least access-

ible to man. No stream in this region should be dismissed without at least a passing glance for otter signs; only by first finding these can one expect to have any hope of staging a successful all-night vigil. On the evidence, the Waiau and Aparima Rivers and their tributaries seem most worthy of attention.

It should be obvious that, confirmed and identified, the waitoreke could write an important chapter in South Island pre-history.

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